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IS 3252 (1987): Shroud-laid Cotton Line [TXD 9: Cordage]



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IS : 3252 - 1987

(Reaffirmed 2003)

Indian Standard
**SPECIFICATION FOR
SHROUD-LAID COTTON LINE**
(Second Revision)

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Indian Standard

SPECIFICATION FOR SHROUD-LAID COTTON LINE

(Second Revision)

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(Continued on page 2)

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Indian Standard
**SPECIFICATION FOR
SHROUD-LAID COTTON LINE**
(Second Revision)

0. FOREWORD

0.1 This Indian Standard (Second Revision) was adopted by the Indian Standards Institution on 8 January 1987, after the draft finalized by the Cordage Sectional Committee had been approved by the Textile Division Council.

0.2 This standard first published in 1965, was revised in 1975. In the present revision the following major changes have been made in the light of the experience gained during its use:

- a) The rot proofing requirement has been modified,
- b) Pitch or maximum length of 10 lays has been introduced, and
- c) The sampling clause has been modified.

Opportunity has also been availed to modify certain other clauses of the specification so as to bring the same in line with other updated cordage specifications.

0.3 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the requirements of five varieties of shroud-laid cotton lines.

*Rules for rounding off numerical values (*revised*).

2. TERMINOLOGY

2.1 For the purpose of this standard, the definitions given in IS : 3871-1984* shall apply.

3. MANUFACTURE

3.1 Yarn — Cotton yarn of 60 tex (or 10^s count) shall be used for the manufacture of the lines. It shall be evenly spun and shall be reasonably free from leaf particles, snarls and slubs. The yarns shall have Z-twist.

3.2 Strands — Every strand as far as the number of yarns is concerned shall satisfy the requirements of Table 1. The strands shall be well-formed and free from splices, grooves and sunken yarns. The strands shall have S-lay.

TABLE 1 REQUIREMENTS FOR SHROUD-LAID COTTON LINE

(Clauses 3.2 and 4.1)

SL NO.	NOMINAL DIA	NO. OF YARNS PER STRAND	LINEAR DENSITY	PITCH OR MAXIMUM LENGTH OF 10 LAYS	BREAKING LOAD ON MINIMUM 60 cm TEST LENGTH, Min
(1)	(2)	(3)	(4)	(5)	(6)
			ktex	cm	N*
1	1	3	1	3.3	70
2	2	8	3	6.6	195
3	4	34	11	13.2	785
4	5	45	16	16.5	1 125
5	6	60	21	19.8	1 520
TOLER- ANCE	—	—	±5 percent	—	—
METHOD OF TEST	IS : 7071 (Part 3)- 1974†	—	IS : 7071 (Part 2)- 1974†	IS : 7071 (Part 3)- 1974†	IS : 1670 - 1970§

*1N = 0.102 kgf approximately.

†Methods of physical test for ropes and cordages: Part 3 Diameter, circumference and lay.

‡Methods of physical test for ropes and cordages: Part 2 Mass, length and linear density.

§Method for determination of breaking load, elongation at break and tenacity of yarns (first revision).

*Glossary of terms relating to fibre ropes and cordages (first revision).

3.3 Lay of Line — The line shall consist of four strands laid in Z-direction.

3.4 Skein — It shall be continuous throughout its length and shall not contain splices and joints. The length of the skein shall be 37 m or as agreed to between the buyer and the seller.

3.5 Rotproofing — If required by the buyer, the lines shall be rotproofed by the application of rotproofing agent in appropriate quantity as agreed to between the buyer and the seller. In case zinc or copper naphthanate is used, the zinc content shall be within 0.8 to 1.2 percent and copper content shall be within 0.4 to 0.8 percent respectively and the estimation of Zn and Cu shall be done in accordance with IS : 3522 (Part 1)-1966*. The line shall not be treated with starch or any other finishing material which may cause tendering.

3.6 Dyeing — If so required by the buyer, the lines may be manufactured from dyed yarns and the colour of the line shall be a matter of prior agreement between the buyer and the seller. The dyed line shall be free from stains and patches.

NOTE — The lines if supplied to the Defence Services, shall be as given below:

<i>Nominal Dia</i> mm	<i>Undyed or Dyed</i>
1	Undyed or dyed to olive green or khaki
2	Undyed or dyed to blue or olive green or khaki
4	Undyed or dyed to olive green or khaki
5	do
6	do

4. REQUIREMENTS

4.0 Atmospheric Conditions for Conditioning and Tests

4.0.1 The tests shall normally be carried out under prevailing atmospheric conditions. In all cases of dispute, however, tests shall be

*Method for estimation of common preservatives used in textile industry.

carried out on samples which have been conditioned for 24 hours in an atmosphere at 65 ± 2 percent relative humidity and $27 \pm 2^\circ\text{C}$ temperature (see IS : 6359-1971*). Where practicable, tests shall be made in the standard conditioning atmosphere; otherwise, they shall be made as quickly as possible but not exceeding 15 minutes of removal of the test pieces from the conditioning atmosphere.

4.1 The lines shall comply with the requirements of Table 1.

4.2 The other requirements of the line shall be as given in Table 2.

TABLE 2 OTHER REQUIREMENTS OF SHROUD-LAID COTTON LINE

SL No.	CHARACTERISTIC	REQUIREMENT	METHOD OF TEST
(1)	(2)	(3)	(4)
i)	Colour fastness to:		
	a) Washing, Test 3	4 or better	IS : 764-1979* (Using distilled water as the washing liquor instead of soap-soda solution)
	b) Light	4 or better	IS : 2454-1985†
	c) Rubbing	3 or better	IS : 766-1956‡
ii)	pH value	6 to 8	IS : 1390-1983§

*Method for determination of colour fastness of textile materials to washing: Test 3 (second revision).

†Method for determination of colour fastness of textile materials to artificial light (xenon lamp) (first revision).

‡Method for determination of colour fastness of textile materials to rubbing.

§Methods for determination of pH value of aqueous extracts of textile material (first revision).

5. PACKING

5.1 Unless otherwise specified, the lines shall be packed conforming to the requirements laid down in IS : 3256-1980†.

*Method for conditioning of textiles.

†Code for inland packaging of ropes and cordages (first revision).

6. MARKING

6.1 Each skein shall have a label securely attached to it on which the following information shall be legibly marked:

- a) Name of the material,
- b) Nominal diameter of the line,
- c) Length and net mass of the skein,
- d) Manufacturer's name, initials or trade-mark, and
- e) Year of manufacture.

6.1.1 Any other marking as agreed to between the buyer and the seller may be given.

6.2 Each skein may also be marked with the Standard Mark.

NOTE— The use of the Standard Mark is governed by the provisions of the Indian Standards Bureau of Act 1986 and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers, may be obtained from the Bureau of Indian Standards.

7. SAMPLING

7.1 A quantity of skeins of same linear density and same type manufactured under similar conditions and delivered to a buyer against a despatch note shall constitute a lot.

7.2 The conformity of the lot shall be determined on the basis of the tests carried out on the samples selected from it.

7.3 Sample Size— Sampling shall be as representative as possible of the lot subjected to the measurements and tests. Draw the samples at random at the rate shown by the following formula:

$$S = 0.4\sqrt{N}$$

where S is the number of skeins selected as sample and N is the size of the lot expressed as number of 37 m skeins. When S as calculated is not a whole number, round off the value obtained to give a whole

number in accordance with the requirements of IS : 2-1960*. In cases where S is less than one draw one sample skein.

7.3.1 For evaluating length of the skein, number of yarns per strand, pickt, linear density, breaking load, colour fastness and pH value the number of skeins selected according to **7.3**, shall constitute the test sample.

7.3.2 For evaluating the net mass of the lot, all the skeins in the lot shall constitute the test sample.

7.4 Criteria for Conformity — The lot shall be declared as conforming to the standard if the following conditions are satisfied:

- a) The length of each skein is not less than the specified length, and
- b) The average values of the test results in respect of other requirements conform to the requirements specified in the standard.

*Rules for rounding off numerical values (*revised*).

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